BEFORE THE PUBLIC SERVICE COMMISSION OF SOUTH CAROLINA

In the Matter of:	**)**	
	)	
Application of Duke Energy Carolinas, LLC	**)**	**Docket No. 2018-319-E**
for Adjustments in Electric Rate Schedules	**)**	
and Tariffs	**)**	

DIRECT TESTIMONY AND EXHIBITS OF

JOHN HOWAT

ON BEHALF OF

SOUTH CAROLINA STATE CONFERENCE OF THE NATIONAL ASSOCIATION FOR THE ADVANCEMENT OF COLORED PEOPLE,

SOUTH CAROLINA COASTAL CONSERVATION LEAGUE, AND

UPSTATE FOREVER

February 26, 2019

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I. Introduction

Q. PLEASE STATE YOUR NAME, JOB TITLE, EMPLOYER AND BUSINESS ADDRESS.

A. My name is John Howat. I am a Senior Policy Analyst at the National Consumer Law Center ("NCLC"), 7 Winthrop Square, Boston, Massachusetts 02110. The National Consumer Law Center is a non-profit law and policy advocacy organization using expertise in consumer law and energy policy to advance consumer justice, racial justice, and economic security for low-income families and individuals in the United States.

Q. PLEASE DESCRIBE YOUR PROFESSIONAL BACKGROUND AND EXPERIENCE.

A. Over the past nineteen years at NCLC, I have managed a range of regulatory, legislative, and advocacy projects across the country in support of low-income consumers' access to utility and energy related services. I have been involved with the design and implementation of energy affordability and efficiency programs, regulatory consumer protections, rate design, issues related to metering and billing, credit scoring and reporting, and energy burden and demographic analysis. I have worked on behalf of community-based organizations or their associations in Arkansas, Arizona, California, Idaho, Illinois, Georgia, Indiana, Kansas, Louisiana, Massachusetts, Mississippi, Nevada, New Jersey, New Mexico, North Carolina, Pennsylvania, Rhode Island, Texas, Utah, Vermont, Washington and Wisconsin. I have worked under contract on low-income energy and utility issues with the U.S. Department of Health and Human Services, Oak

Ridge National Laboratory, Lawrence Berkeley National Laboratory, the National Energy Assistance Directors' Association, and the Office of the Attorney General in Nevada, the Office of the Attorney General in Illinois, the Ohio Consumers' Counsel, Pennsylvania Office of Consumer Advocate, Maryland Office of People's Counsel, the Georgia Division of Family and Children's Services, and AARP. In addition, I am a presenter at conferences of National Community Action Foundation, National Energy Assistance Directors' Association, National Association of Regulatory Utility Commissions, and National Association of State Utility Consumer Advocates. I am the co-author of Access to Utility Service, a law and policy manual published by National Consumer Law Center, and the 2016 Lawrence Berkeley National Laboratory report, "Recovery of Utility Fixed Costs: Utility, Consumer, Environmental and Economist Perspectives."[1] I am primary author of "Home Energy Costs: The New Threat to Independent Living for the Nation's Low-Income Elderly,"[2] "Tracking the Home Energy Needs of Low-Income Households through Trend Data on Arrearages and Disconnections," [3] "Rethinking Prepaid Utility Service: Customers at Risk,"[4] and "Public Service Commission Consumer Protection Rules and Regulations: A Resource Guide."[5]

1 https://emp.lbl.gov/sites/all/files/lbnl-1005742_1.pdf.
2 Clearinghouse Review, Vol. 9 - 10, Jan - Feb 2008
3 National Energy Assistance Directors' Association, 2004, http://www.neada.org/publications/Tracking_the_Need.pdf
4 National Consumer Law Center, 2012, https://www.nclc.org/images/pdf/energy_utility_telecom/consumer_protection_and_regulatory_issues/report_prepaid_utility.pdf.
5 National Energy Assistance Directors' Association, 2006, http://www.neada.org/publications/Consumer_Protection_Guide.pdf

I have been professionally involved with energy program and policy issues since 1981. Prior to joining the Advocacy Staff at National Consumer Law Center, I consulted with a broad range of public and private entities on issues related to utility industry restructuring. Previously, I worked as Research Director of the Massachusetts Joint Legislative Committee on Energy, responsible for the development of new energy efficiency programs and low-income energy assistance budgetary matters; economist with the Electric Power Division of the Massachusetts Department of Public Utilities, responsible for analysis of electric industry restructuring proposals; and Director of the Association of Massachusetts Local Energy Officials. I have a Master's Degree from Tufts University's Graduate Department of Urban and Environmental Policy and a Bachelor of Arts Degree from The Evergreen State College.

My resume is included as Attachment JH-1.

Q. HAVE YOU TESTIFIED PREVIOUSLY BEFORE STATE PUBLIC UTILITIES COMMISSIONS?

A. I have presented testimony or comments before utility regulatory commissions in California, Idaho, Illinois, Indiana, Louisiana, Maryland, Massachusetts, Missouri, New Mexico, Nevada, North Carolina, Pennsylvania, Rhode Island, Texas, Vermont, Washington State, and Wisconsin.

Q. ON WHOSE BEHALF ARE YOU TESTIFYING?

A. I am testifying on behalf of the South Carolina State Conference of the National Association for the Advancement of Colored People (SC NAACP), South Carolina Coastal Conservation League ("CCL"), and Upstate Forever.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my testimony is to address issues related to the Duke Energy Carolinas, LLC ("Company" or "DEC") proposal to increase the residential basic facilities charge; propose that DEC increase funding for its low-income energy-efficiency programs; and propose that the Commission direct the Company to implement a regular general residential and low-income customer service data reporting protocol, as well as conduct a technical session on the same.

Q. PLEASE SUMMARIZE YOUR KEY POINTS AND RECOMMENDATIONS.

A. Testimony that follows will:

- Present evidence demonstrating that increasing the fixed, basic facilities charge disproportionately harms low-income and low-volume consumers within a rate class. I will show that on average, low-income households and households headed by those over the age of 65 use less electricity than their counterparts, and that increased monthly fixed charges therefore unfairly cause disproportionate harm and exacerbate pre-existing problems with electric-utility affordability and home-energy security faced by many of these households. Accordingly, I will recommend that the Commission reject DEC's proposal to increase the basic facilities charge.
- Recommend that the Company increase its low-income energy efficiency program funding to a level proportionate to low-income customers' contribution to residential revenues as part of a strategy to mitigate the effects of any potentially approved rate increases on vulnerable populations.

- Recommend that DEC publicly file with the Commission monthly data regarding general residential and low-income customer accounts, billing, receipts, arrearages, notices of disconnections, bill payment agreements, disconnections of service for nonpayment, reconnections of service after disconnection for non-payment, accounts written off as uncollectible, and accounts sent to collection agencies. I will present data reporting models from Ohio, Illinois, Pennsylvania, and Iowa.

II. DEC's Proposal to Increase the Fixed Monthly Residential Basic Facilities Charge

Q. PLEASE DESCRIBE DEC'S PROPOSAL TO INCREASE THE MONTHLY RESIDENTIAL BASIC FACILITIES CHARGE.

A. DEC proposes to recover an increased portion of its costs from residential customers through a dramatically increased fixed monthly fee called the "basic facilities charge." As presented by the Company's witness, Mr. Pirro, DEC proposes to more than triple the current fixed, monthly residential ("RS") basic facilities charge from $8.29 to $28.00, an increase of 237.8%.[6] Additional riders and fees would bring the total residential fixed monthly charge to $28.89, an increase of 245.99% over the current charge.[7]

Q. WHAT IS YOUR RESPONSE TO DEC'S PROPOSAL TO INCREASE FIXED MONTHLY CHARGES FOR ITS RESIDENTIAL CUSTOMERS?

A. There are numerous problems with high fixed charges, both for customers and for the utility. Increasing fixed charges causes disproportionate impacts to low-

[6] Pirro Direct Exhibit No. 6, attached to *Direct Testimony of Michael J. Pirro for Duke Energy Carolinas, LLC*, Docket No. 2018-319-E (November 8, 2018) [hereinafter "Pirro Direct"]
[7] Pirro Direct Exhibit 3, p. 1.

volume, low-income customers. In addition, high fixed charges send the wrong price signals to customers, discouraging energy efficiency and undermining the incentive to change usage patterns so that increased investment in high-cost generation can be avoided.

These mandatory, fixed fees must be paid each month by customers whether or not they so much as touch a light switch. As such, they undermine the ability of cash-strapped consumers to take control over their electricity bills. The ability to take such control – through implementation of energy efficiency measures and adoption of conservation practices that do not undermine health and safety – is the cornerstone of home energy security for low-income households. The Company's proposal to drastically increase these mandatory fees dislodges that cornerstone in a precarious manner, with ramifications to the home energy security of DEC's low-income, low-volume customers.

Q. HOW DOES DEC'S PROPOSED INCREASE TO THE BASIC FACILITIES CHARGE COMPARE TO INCREASES PROPOSED BY OTHER INVESTOR-OWNED UTILITIES IN THE UNITED STATES?

A. A recent analysis tracked 158 investor-owned, rate-regulated utility (IOU) proposals from 2015 to 2018 to increase monthly fixed charges. The average increase approved by commissions was $1.38, taking the average customer charges from $9.39 to $10.77 over the four-year period.[8] Thus, the Company's proposal to increase total monthly residential fixed charges to nearly $29 represents an extreme outlier among IOUs operating in the U.S.

[8] For a summary of this research and analysis, *see* Williams, S., "Fixed Charges: The Good, the Bad and the Ugly," https://medium.com/getting-it-right-on-electricity-rate-design/fixed-charges-the-good-the-bad-and-the-ugly-5f2e53652648, February 2019.

It should be noted, however, that a handful of other IOUs have in recent years proposed extremely high fixed charges. Gulf Power in Florida proposed the single highest fixed charge of all among investor-owned utilities over the last four years. The utility proposed a $48.06 monthly fee for residents in 2017—a 155 percent hike from its already very steep $18.86/month existing charge. The Florida commission fully rejected Gulf Power's proposal.[9] In addition, Central Hudson Gas & Electric in New York proposed a $30 monthly fixed charge while Indianapolis Power & Light in Indiana and Westar in Kansas both proposed a $27 monthly charge. The Central Hudson and IP&L proposals were rejected in full, and Westar's was scaled back to $14.50.[10]

Overall, from 2015 to 2018 there were 31 utilities in 18 states that proposed to increase their fixed fees by at least 100 percent. Of these, commissions approved a 40 percent increase on average—resulting in an average $10.65 customer charge.[11] Thus, approval of the nearly $29 in residential fixed fees – more than tripling the current monthly charge – would represent an extreme outlier from national practice.

Q. HOW DO INCREASED FIXED CHARGES PENALIZE LOW-VOLUME CUSTOMERS?

A. Providing for utility cost recovery through increased fixed charges penalizes the low-volume consumers within a customer class in two important ways. First, it increases the total monthly bills of low-volume consumers by a higher percentage than those of higher-volume consumers. In fact, DEC states that under the

[9] Id.
[10] Id.
[11] Id.

Company's proposal to implement a drastically increased basic facilities charge, low-volume residential customers using 250 kWh/month will see their electric bills increase by 55.57% while the bills of high-volume customers using 4,000 kWh/month will remain virtually unchanged.[12] This extreme intra-class cost shift raises profound equity concerns because, if implemented, it would disproportionately harm low-income, elderly, and African-American ratepayers, who on average use less electricity than their counterparts in nearly every region of the country.

Second, by shifting cost recovery from volumetric energy charges to fixed monthly customer charges, the Company's proposal would diminish the customer price incentive to participate in energy-efficiency programs or otherwise make home energy-efficiency improvements. This perverse incentive would disempower South Carolina consumers from reducing their utility bills, which they can do by making efficiency improvements to their homes, changing their behavior, or renting or purchasing higher efficiency housing units. Reducing the potential for customers to realize savings from energy-efficiency measures would undermine the value proposition offered by South Carolina home builders, manufacturers, and installers offering more energy-efficient homes and products. The Company's proposal to more than triple the residential fixed charge would also reduce the customer cost-savings resulting from DEC's own efficiency program measures. While this perverse effect occurs for all customer classes that see higher fixed charges, including all customers in the residential customer class,

[12] Pirro Direct Exhibit 3, p. 1.

the effect is pronounced for low- to moderate-income customers who face greater pressures on household expenses.

Q. WHAT DO YOU RECOMMEND WITH REGARD TO DEC'S PROPOSAL TO INCREASE FIXED MONTHLY CHARGES FOR ITS RESIDENTIAL CUSTOMERS?

A. Because adoption and implementation of the Company's proposal would unjustly shift costs and cause disproportionate harm to low-volume, low-income residential ratepayers while undermining the viability of energy-efficiency programming, the Commission should reject the Company's proposal to increase the fixed monthly customer charge and not allow the basic facilities charge to increase any more than the percentage revenue increase, if any, allowed by the Commission for the residential class as whole.[13]

Q. WHAT IS THE BASIS FOR YOUR ASSERTION THAT AN INCREASE IN THE BASIC FACILITIES CHARGE WILL DISPROPORTIONATELY IMPACT LOW-INCOME, ELDERLY, AND AFRICAN-AMERICAN RATEPAYERS?

A. On average, low-income consumers in South Carolina and North Carolina—defined here as households living at or below 150% of the federal poverty level—use less electricity than the two-state residential average and less than their higher-income counterparts. Similarly, households headed by an elder—defined here as a person 65 years of age or older—use less electricity on average than the two-state average and less than non-elder households. Furthermore, African-American-headed households use less electricity on average than their white

[13] It is my understanding that SC NAACP, CCL and Upstate Forever witness Jonathan Wallach also makes this recommendation for these reasons, discussed in my testimony in further detail below.

counterparts. Thus, the Company's proposal, if approved, will disproportionately harm these groups by increasing their bills by a higher percentage than average.

The table below illustrates that, on average, low-income households in South Carolina and North Carolina use 15.6% less electricity than their higher-income counterparts, elder households use 11.2% less electricity than non-elder households, and African-American households use 11.6% less than white households.

2009 Median Household Electricity Usage by Poverty 150% Status, Elder Status, and Race of Householder – North Carolina and South Carolina

Household Income	*kWh*	*% Difference*
At or below 150% Poverty	12,105	-15.6%
Above 150% Poverty	14,343	

Householder's Age	*kWh*	*% Difference*
65 or Over	12,469	-11.2%
Less than 65	14,038	

Race of Householder	*kWh*	*% Difference*
African-American	12,468	-11.6%
White	14,111	

Source: Energy Information Administration, 2009 Residential Energy Consumption Survey

Q. PLEASE DESCRIBE THE DATA SOURCES AND METHODOLOGY THAT YOU USED TO GENERATE THE TABLES AND CHARTS IN THIS SECTION.

A. I generated the tables and graphs depicting electricity usage using microdata from the United States Department of Energy, Energy Information Administration 2009 Residential Energy Consumption Survey ("RECS"). The 2009 RECS

includes detailed residential energy consumption and expenditure information from 27 U.S. geographic areas referred to as "reportable domains." South Carolina and North Carolina comprise one of the reportable domains.[14] The Survey instrument includes questions regarding a broad range of demographic factors and household characteristics. Using SPSS statistical software, I sorted Survey data to generate cross-tabulations of median kilowatt-hour usage by poverty status, race, and age of residents.

Results of these analyses demonstrate that in the North Carolina-South Carolina reportable domain, households headed by low-income, elderly, and African-American customers use less electricity—on average—than their wealthier, younger, and white counterparts. As indicated above, the Company's proposal, by penalizing low-volume consumers, will disproportionately harm these groups of ratepayers.

The Survey data demonstrate that in 26 of 27 regions surveyed, median average electricity consumption among households living at or below 150% of the federal poverty guidelines is less than that of higher-income households. The table below[15] reflects this consistent pattern.

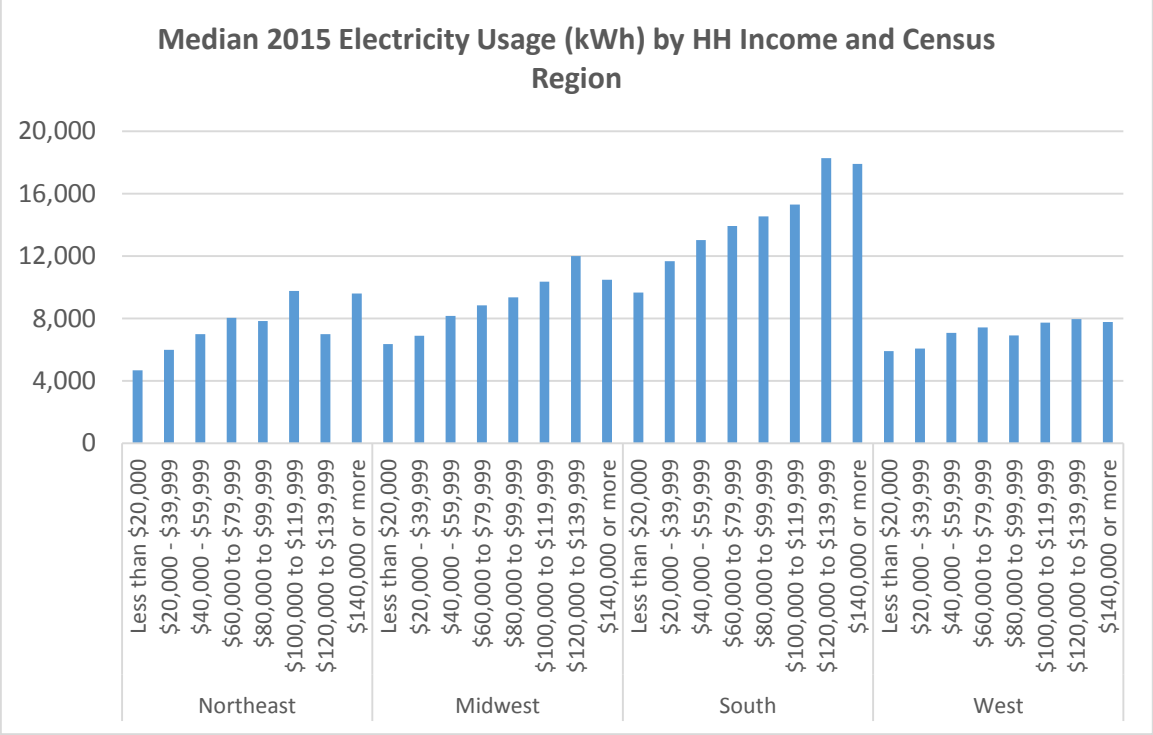
[14] The Survey results cannot be sorted to provide results that apply specifically to an individual utility service territory. However, while the electricity usage among subgroups of residential consumers in the Company's service territory may vary somewhat from the two-state average usage, the relative usage patterns identified in the North Carolina and South Carolina region are highly consistent with those from other geographic regions across the United States. It is therefore reasonable to assume that the general usage patterns identified in North Carolina and South Carolina – and throughout the United States – apply to the DEC service territory.

[15] Tabulated by National Consumer Law Center using U.S. Energy Information Administration 2009 Residential Energy Consumption Survey.

Median 2009 Site Electricity Usage (kWh), by 150% Poverty Status				
	< or = 150% Poverty	Above 150% Poverty	All Households	% Difference
Connecticut, Maine, New Hampshire, Rhode Island, Vermont	4,708	7,468	6,961	-37.0%
Massachusetts	4,222	6,056	5,686	-30.3%
New York	4,544	5,969	5,355	-23.9%
New Jersey	4,969	7,497	7,231	-33.7%
Pennsylvania	8,402	9,690	9,306	-13.3%
Illinois	7,350	9,116	8,432	-19.4%
Indiana, Ohio	7,831	9,999	9,365	-21.7%
Michigan	7,073	8,190	7,764	-13.6%
Wisconsin	7,449	7,889	7,727	-5.6%
Iowa, Minnesota, North Dakota, South Dakota	6,241	9,285	8,940	-32.8%
Kansas, Nebraska	8,808	9,402	9,302	-6.3%
Missouri	11,705	12,232	11,991	-4.3%
Virginia	10,997	13,859	13,231	-20.7%
Delaware, District of Columbia, Maryland, West Virginia	10,381	13,063	12,848	-20.5%
Georgia	12,727	13,816	13,499	-7.9%
North Carolina, South Carolina	12,105	14,343	13,651	-15.6%
Florida	11,905	13,760	13,212	-13.5%
Alabama, Kentucky, Mississippi	11,802	15,847	14,656	-25.5%
Tennessee	12,537	14,480	13,782	-13.4%
Arkansas, Louisiana, Oklahoma	12,628	13,646	13,421	-7.5%
Texas	10,602	13,799	12,878	-23.2%
Colorado	5,216	6,516	6,231	-20.0%
Idaho, Montana, Utah, Wyoming	10,665	9,588	9,804	11.2%
Arizona	10,088	13,056	12,105	-22.7%
Nevada, New Mexico	7,637	9,434	9,164	-19.0%
California	4,739	5,939	5,628	-20.2%
Alaska, Hawaii, Oregon, Washington	10,597	10,799	10,754	-1.9%
U.S. Average	*8,432*	*10,072*	*9,687*	*-16.3%*

Q. WHY DO YOU REFER TO THE 2009 RECS RESULTS RATHER THAN THE MORE RECENT 2015 RECS?

A. After 2009, the RECS was conducted again in 2015. However, due to dramatically reduced sampling, the 2015 RECS cannot be filtered by geographic areas as small as those reflected in the 2009 RECS. In addition, the 2015 RECS did not include ratio of income to poverty flags or household income brackets that are narrow enough to allow for calculation of household income-to-poverty ratios. However, despite the lack of geographic granularity, the relationship between median electricity usage and household income identified using the 2009 RECS is confirmed in the 2015 survey. This relationship is illustrated in the graph below.



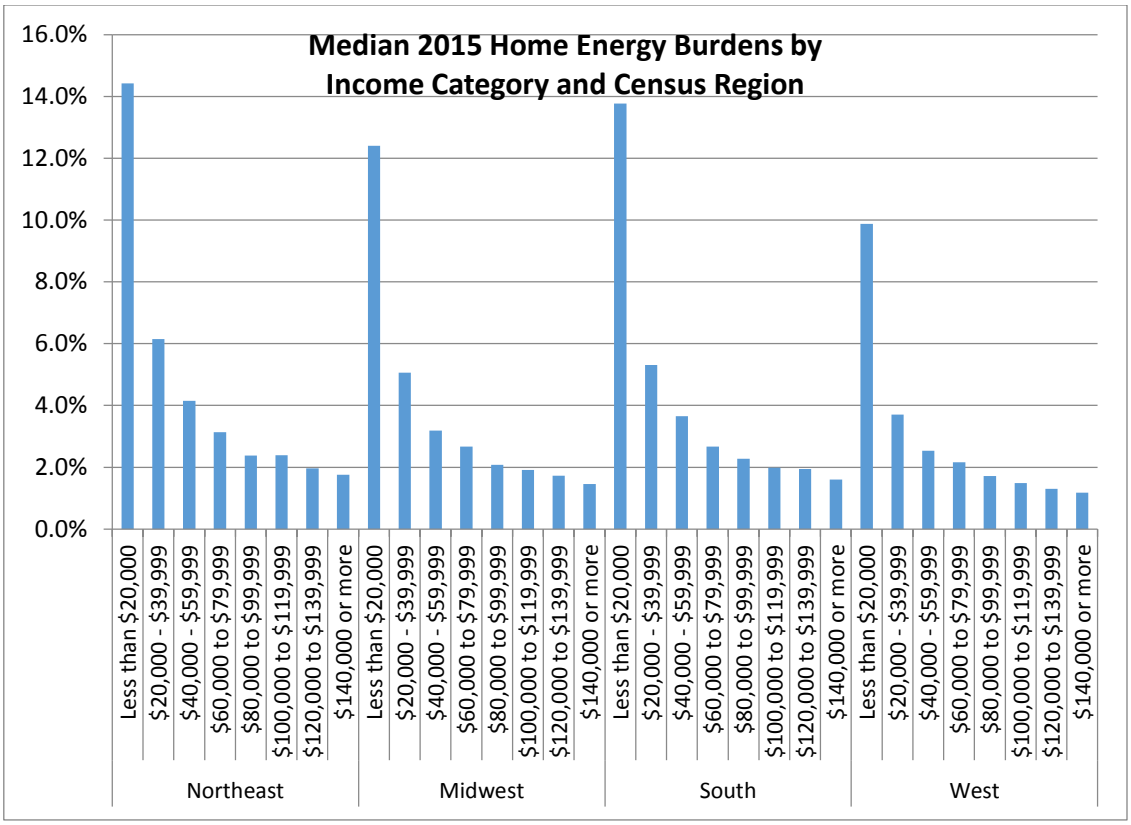
Thus, while lacking the level of detail available from the 2009 Survey, the 2015 RECS confirms the basic premise that, on average, shifting cost recovery from

volumetric charges to fixed fees disproportionately harms lower-income electricity customers.

Q. IN ADDITION TO USAGE DATA, DOES THE 2015 RECS PROVIDE INSIGHTS ON INDICATORS OF HOME ENERGY INSECURITY?

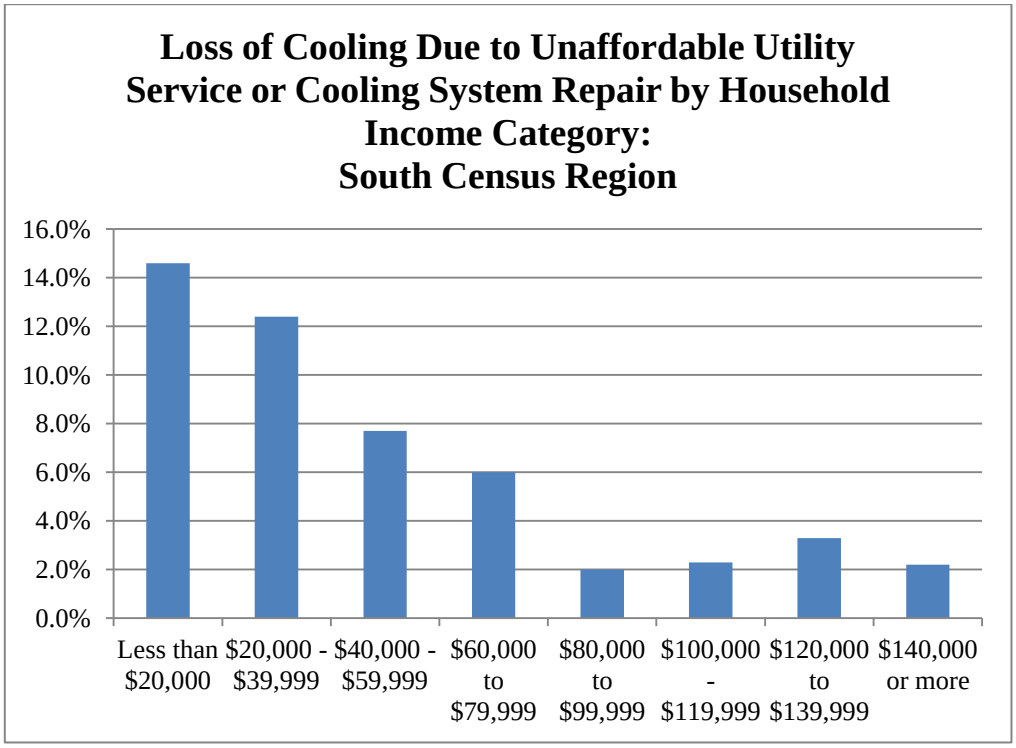
A. Yes. The 2015 RECS included questions regarding home energy expenditures, loss of heating and cooling service, and foregoing basic necessities due to energy service affordability challenges. The chart below shows that in the South Census Region,[16] as in Census Regions throughout the U.S., home energy burdens – that proportion of household income devoted to home energy services – were much higher among households with income of $20,000 or less than households with a higher level of income.[17] These high home energy burdens among low-income households exist irrespective of the fact that these households, on average, use less electricity than higher income households. The charts below reflect home energy burdens by income category.

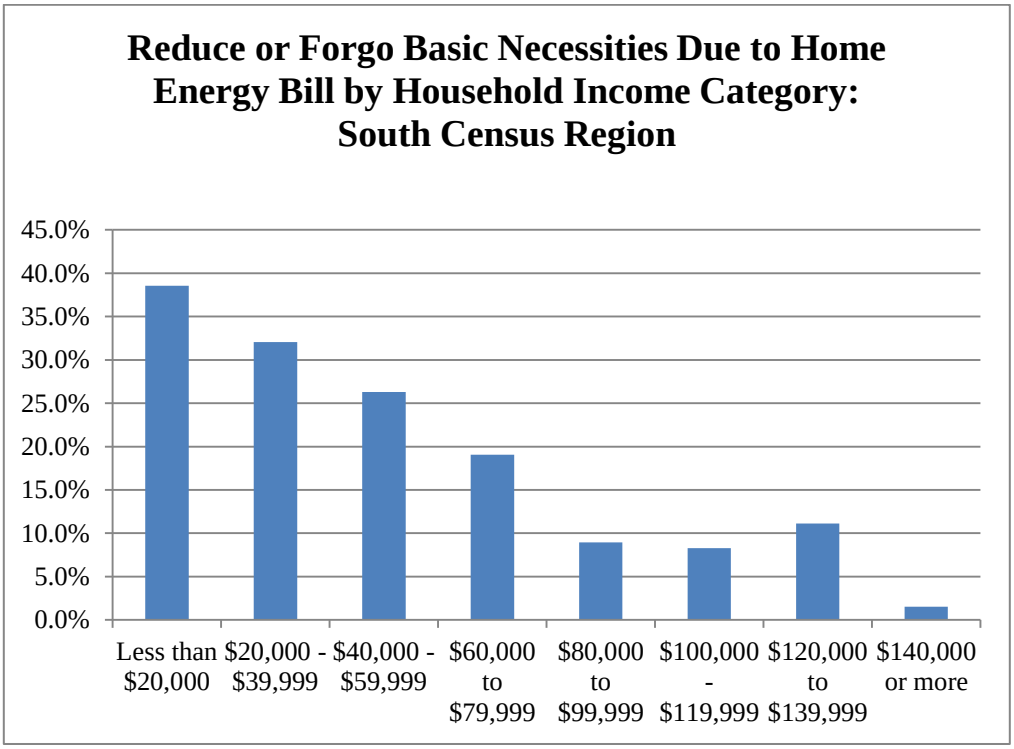
[16] Mapping of Census Regions are provided by the U.S. Census Bureau at https://www2.census.gov/geo/pdfs/maps-data/maps/reference/us_regdiv.pdf.
[17] NCLC analysis of 2015 RECS microdata.



In addition to reflecting high home energy burdens among low-income households, analysis of the 2015 RECS data demonstrates that in the South Census Region, low-income respondents report higher incidences of loss of cooling service and foregoing basic necessities due to high home energy bills.

Charts reflecting these analyses are shown below:





Q. HOW DO HIGH FIXED CHARGES AFFECT ENERGY EFFICIENCY?

A. The Company's proposal, by shifting costs away from volumetric charges and onto the fixed, basic facilities charge, would lessen the incentive to save on utility bills by reducing usage, investing in more efficient homes and appliances, and participating in energy-efficiency programs. With each incremental increase in fixed, non-bypassable charges on the monthly bill, the customer loses an increment of control over that bill, even in cases where the volumetric portion remains the larger portion of the total bill. Instead of sending a signal to the customer to take control over energy usage, incremental increases in fixed charges chip away at the customer's incentive and ability to take control over the bill.

The negative effects could be pronounced in affordable housing. Renters generally rely on building owners to invest in property maintenance that is important to manage utility expenses, such as weatherization and air-sealing of exterior walls and windows and tuning of cooling and heating systems. Reducing customer bill savings from the equation would likely reduce the incentive for property owners to invest in such repairs and improvements to manage utility expenses.

Q. WHY SHOULD THE COMMISSION BE CONCERNED ABOUT THE EFFECT OF HIGH FIXED CHARGES ON ENERGY EFFICIENCY?

A. Energy-efficiency programs, operating in conjunction with effective regulatory consumer protections and bill-payment assistance, comprise the cornerstone of long-term, low-income home-energy security. Increasing fixed customer charges undermines the ability of customers to control their bills, which constitutes a

particular problem for low-income households that struggle with affordability. Efficiency remains the premier energy resource, due primarily to its low capital cost, environmental benefits, and relative ease of deployment. Rate design should never serve as a deterrent to full realization of those benefits.

Q. WHAT HAS THE COMPANY SAID IN THIS PROCEEDING WITH RESPECT TO LOW-INCOME ENERGY EFFICIENCY PROGRAMMING?

A. DEC witness and South Carolina President, Mr. Kodwo Ghartey-Tagoe stated that the Company's existing energy efficiency and demand-side management programs are designed to engage and educate customers, and "empower them with financial incentives to invest in energy efficiency improvements."[18] With respect to the Company's primary low-income energy efficiency program offering, Mr. Ghartey-Tagoe stated the following:

> The Neighborhood Energy Saver Program is a residential EE program targeted at low-income customers that includes the direct installation of a number of EE measures. DE Carolinas has implemented the program utilizing a neighborhood engagement, door-to-door strategy. Through the program, a comprehensive set of EE measures is installed at no direct cost to the customer. Since its inception, we've helped more than 10,700 DE Carolinas customers in South Carolina save nearly 1.3 million kWh each year through 2017. This means the average household could save more than $45 per year on energy costs.[19]

Q. PLEASE COMMENT ON THE STATEMENTS OF MR. GHARTEY-TAGOE WITH RESPECT TO ENERGY EFFICIENCY PROGRAMMING.

18 Direct Testimony of Kodwo Ghartey-Tagoe for Duke Energy Carolinas, LLC, Docket No. 2018-319-E (November 8, 2018), p. 29.
19 Id., at p. 30.

A. As an initial matter, I agree with Mr. Kodwo Ghartey-Tagoe's statements in support of the value of energy efficiency as a resource to empower customers and reduce costs. But I respectfully submit that the Company's proposal to drastically increase the basic facilities charge, over which a customer has no control irrespective of usage, directly conflicts with the stated program design objectives of energy efficiency. By de-emphasizing volumetric charges and shifting a much higher proportion of recovery of the revenue requirement to fixed, non-bypassable charges, DEC would undermine its customers' incentive to invest in energy efficiency or participate in energy-saving programs.

With respect to the Company's statement about the Neighborhood Energy Saving Program, I respectfully submit that, when viewed in the context of DEC's entire DSM portfolio of "more than a dozen energy-saving programs for every type of energy user and budget,"[20] low-income energy efficiency programming in the service territory is severely underfunded. In 2017, the Neighborhood Energy Saver Program, the Company's only energy-efficiency program specifically targeting low-income customers, comprised only about 8% of the total costs of the Company's South Carolina residential conservation and behavioral programs.[21]

[20] Id., at p. 29.

[21] South Carolina Public Service Commission, Docket No. 2018-72-E, DEC Exhibit 2, p. 15, March 2, 2018 (indicating that total program costs for the Neighborhood Energy Saver in North and South Carolina were $5,493,000 whereas all residential efficiency programs cost $65,085,000; just over 27% of those amounts are allocated to South Carolina).

However, as can be seen in the table below depicting DEC's South Carolina service territory, about 26% of the population lives at or below 150% of the federal poverty guidelines.[22]

Data Category	Duke Carolinas	South Carolina
"Very Poor" (0% to 50% of Pov Level)	7.30%	7.60%
Poverty Rate (0% to 100% Poverty level)	15.90%	16.60%
"Near Poor" (100% to 150% of Poverty Level)	10.30%	10.30%

Assuming that the Census Bureau's population ratio of income to poverty data roughly matches household income and poverty, the conclusion may be drawn that the proportion of revenue contributed by low-income DEC customers for residential energy efficiency programs far exceeds the 8% of total sector program costs.

Q. WHAT IS THE APPROPRIATE LEVEL OF FUNDING OF DEC'S LOW-INCOME ENERGY EFFICIENCY PROGRAMMING?

A. Low-income energy-efficiency program funding should be allocated at a level that is, at a minimum, proportionate to the residential retail sales revenues contributed by income-eligible participants. As indicated above, the 2017 total cost of the Neighborhood Energy Saver Program was only about 8% percent of the total cost for residential conservation and behavioral programs. Thus, I recommend that the PSC order that DEC increase funding for the Neighborhood

[22] U.S. Census Bureau, 2013-2017 American Community Survey 5-year Estimates, Tables B02001, B03003 & C17002; Platts, Electric Investor Owned Utility Service Territories. Westminster, Colorado (2009) (http://www.gisdata.platts.com). The statistics reflect the population-weighted average of block groups served by DEC in South Carolina.

Energy Saver Program to equal a minimum of 26% of total residential energy efficiency funding.

In summary with respect to energy efficiency, if approved and implemented, the Company's proposal to increase the basic facilities charge will compromise the viability of energy-efficiency programming critical to low-income home energy security in the long term. As indicated by Mr. Ghartey-Tagoe in his direct testimony, the average participant in the Neighborhood Energy Saver Program saves around $45 a year. If the Commission were to approve the Company's proposal to more than triple the fixed charge, those annual potential savings would be wiped out in just over two billing cycles. Meanwhile, existing low-income programming is underfunded, and budgets should be increased to more accurately reflect total residential revenues contributed by low-income customers and to help mitigate any potential rate increases approved by the Commission.

III. Low-Income Utility Payment Difficulties and the Threat to Health and Safety from Loss of Service

Q. HAS DEC PROVIDED INFORMATION IN THIS DOCKET REGARDING THE EXTENT TO WHICH THE COMPANY'S LOW-INCOME RESIDENTIAL CUSTOMERS FACE DIFFICULTIES PAYING THEIR MONTHLY UTILITY BILLS?

A. No. Intervenors in this case requested that DEC provide information regarding DEC's South Carolina general residential and low-income residential customer billing, arrearages, late payments, disconnection notices, and disconnection for non-payment.[23] The Company responded that the requested information was not available, particularly for its South Carolina service territory and for low-income customers participating in low-income energy assistance programs. DEC's response to DR-VS 3-1 and DR-VS 3-2 are attached as JH-Exhibit 2. For example, when asked in data request DR-VS 3-1(p) to report monthly number of service disconnections for nonpayment for residential customers in the Company's South Carolina service territory, DEC responded with total numbers of disconnections for "all North and South Carolina accounts, both residential and non-residential."

Q. HAS DEC PROVIDED INFORMATION IN OTHER DOCKETS REGARDING THE EXTENT TO WHICH THE COMPANY'S RESIDENTIAL CUSTOMERS FACE DIFFICULTIES PAYING THEIR MONTHLY UTILITY BILLS?

A. Yes. For example, in Docket No. 2006-193-EG, DEC provides quarterly reports to the Commission delineating South Carolina non-residential disconnections for

[23] DR-VS 3-1.

non-payment, residential disconnections for non-payment, residential disconnections for non-payment of deferred payment agreements, duration of disconnection for non-payment prior to reconnection, and other data points.[24] Thus, it appears that DEC could have been more responsive to data requests regarding territory-specific disconnections, restorations, and deferred payment agreements specific to residential customers.

Q. IS THERE OTHER EVIDENCE OF WIDESPREAD PAYMENT DIFFICULTIES IN THE SOUTH CAROLINA-NORTH CAROLINA REGION?

A. Yes. The 2009 RECS provides evidence that low-income households, and particularly low-income minority households, are at heightened risk of losing necessary home energy services due to difficulty paying their utility bills. The 2009 RECS included questions about electricity service disconnections and other "energy security" metrics. The data may be sorted by "reportable domain," including the South Carolina-North Carolina ("SC-NC") domain. Data may further be filtered by income to poverty ratio and race of the respondent.

Q. DID YOU CONDUCT AN ANALYSIS OF ELECTRICITY DISCONNECTION IN THE NC-SC DOMAIN?

A. Yes. I found that in the NC-SC domain there were highly elevated rates of service disconnection in households living at or below 150% of the poverty level, and that, among these low-income households, there were wide disparities by race in the rate of disconnection. The table below shows that in 2009, 16.1% of African-American households with income below 150% of poverty living in the

[24] *See e.g.*, Duke Energy Carolinas, South Carolina Disconnection Report for Service Terminations, Docket No. 2006-193-EG, January 19, 2019.

two-state region experienced electricity service disconnection. During that same period, similarly-situated white households were disconnected at a rate of 3.0%.

Crosstabulation of 2009 Electricity Disconnections by Race of Householder in North Carolina and South Carolina Households with Income Less than or Equal to 150% Poverty

Race of Householder		*Electricity Disconnected Due to Inability to Pay*		
		No	*Yes*	*Total*
White	Count	926,837	28,459	955,296
	% within Race of Householder	97.0%	3.0%	100.0%
African-American	Count	456,862	87,683	544,545
	% within Race of Householder	83.9%	16.1%	100.0%

Source: U.S. Energy Information Administration 2009 Residential Energy Consumption Survey

Q. WHAT IS YOUR RESPONSE TO THE DISCONNECTIONS DATA?

A. Additional data are required to obtain a clearer picture of service disconnection rates and other indicators of home energy security specific to the DEC service territory. It is certainly possible that disconnection rates have changed since the Survey was conducted. However, as discussed below, absent reliable data, it is not possible to assess the extent to which customers are able to retain access to service, or to design programs and policies geared toward assuring a basic level of home energy security for lower-income households.

Q. PLEASE DESCRIBE THE THREAT TO HEALTH AND SAFETY FROM LOSS OF ELECTRIC SERVICE.

A. Electricity service is widely considered to be a necessity of life and essential to public health and safety. In addition to providing everyday functions, secure, reliable electricity service is critical in avoiding health and safety risks by

providing safe lighting, heat,[25] cooling, power for medical devices, refrigeration of food and medications, and fuel for electric cooking appliances and electrically heated hot water.

Elevated rates of low-income service disconnections and bill payment pressures pose a threat to the health and safety of customers as well as the communities in which we live.

Q. HOW DO LOW-INCOME HOUSEHOLDS BALANCE RETAINING HOME ENERGY SERVICE WITH PAYING FOR OTHER BASIC NECESSITIES?

A. The National Energy Assistance Directors' Association's ("NEADA") *National Energy Assistance Survey* outlines the steps that many individuals and families must take in order to afford basic utility services, often at a risk to their own health.[26] The NEADA survey includes households that received assistance from the Low Income Home Energy Assistance Program ("LIHEAP"). In most states, this includes homes earning at or below 150% of the federal poverty level, but in some states includes those earning 60% or less of the state median income, or those enrolled in programs such as Temporary Assistance for Needy Families, food stamps, Social Security Insurance, or similar assistance.[27] The NEADA survey found that in vulnerable homes, "[b]ecause of the difficultly they faced in

[25] Electricity is required for electric resistance space heating and to operate a boiler or furnace fueled by natural gas or heating oil.

[26] National Energy Assistance Directors' Association, *National Energy Assistance Survey* (Nov. 2011), *available at* http://neada.org/wp-content/uploads/2013/05/NEA_Survey_Nov11.pdf.

[27] National Energy Assistance Directors' Association, *2009 National Energy Assistance Survey* (Apr. 2010), at 1-2, *available at:* http://neada.org/wp-content/uploads/2013/03/2010-04-19NEADA_2009_Survey_Report.pdf.

paying their utility bills as many as 37% went without medical or dental care, and 34% did not fill a prescription or took less than their full dose of prescribed medication."[28] Many individuals reported making difficult or even dangerous decisions when addressing unaffordable energy costs: 39% closed off part of their home; 23% kept the home at a temperature they felt was unsafe or unhealthy; 21% left their home for part of the day; 33% used their kitchen stove or oven to provide heat; and 24% went without food for at least one day.[29]

Q. WHAT HARM MAY OCCUR WHEN A HOUSEHOLD EXPERIENCES LOSS OF HOME ENERGY SERVICE?

A. As noted in the AARP et al. report, "[i]t is common for a household that is denied electricity to turn to alternative and often dangerous means of providing light and heat in the home …. There are instances reported every year of the deaths of children and adults due to the use of a candle in a dwelling without electricity or heat."[30]

When candles are used for light in the absence of electricity, there is additional risk of fatal fire, according to the National Fire Protection Association ("NFPA"). [31] An example of fatalities caused by a candle fire after a utility shut-off was the case of Tashika Turner, who lost three of her young children in a

[28] *Id.* at 2.
[29] *Id.* at 5 (Table II).
[30] AARP, National Consumer Law Center, National Association of State Utility Consumer Advtes, Consumers Union, and Public Citizen, *The Need for Essential Consumer Protections: Smart Metering Proposals and the Move to Time-Based Pricing* (Aug. 2010), at 17, *available at* http://energy.gov/sites/prod/files/oeprod/DocumentsandMedia/NASUCA_Smart_Meter_White_Paper.pdf.
[31] In a report entitled "Home Candle Fires," NFPA reviewed fire service reports and news clips about 117 identified fatal home candle fires in 2005 - 2010 that resulted in a total of 177 civilian fire deaths. Candles were used for light in the absence of power in 30, or one-quarter (26%), of these fires and in 60, or one-third (34%), of the associated deaths. Ahrens, Mary, "Home Candle Fires," National Fire Protection Association, December 2015, p. iv.

candle fire in New York in October, 2013, one day after her electric utility disconnected service for non-payment.[32]

In addition to safe lighting, electric service is required to operate most indoor cooling and heating equipment. Loss of such equipment can have fatal consequences. Extreme heat leads to deaths and illnesses that are preventable when people are able to stay cool indoors. From 1979 through 2003, excessive heat exposure caused at least 8,000 deaths in the United States.[33] In 2001 alone, 300 deaths in the United States were attributed to excessive heat exposure.[34] According to the US Department of Health and Human Services, Centers for Disease Control and Prevention, "[a]ir conditioning is the strongest protective factor against heat-related illness."[35] In cold weather, young children and the elderly are particularly at risk for cold-related illness or death.[36] Extreme heat is similarly dangerous for the elderly, the very young, and those with chronic health conditions.[37]

Loss of electric service also makes it difficult to manage chronic health conditions. In a 2007 report entitled "Unhealthy Consequences: Energy Costs and Child Health: A Child Health Impact Assessment of Energy Costs and the Low Income Home Energy Assistance Program," researchers identified effects of high

[32] *See*, e.g. CNN, "Official: 3 children die in Bronx fire after candle lit," http://www.cnn.com/2013/10/26/us/bronx-deadly-fire.
[33] National Weather Service, National Oceanic and Atmospheric Administration, https://www.weather.gov/arx/heatindex_climatology
[34] Central Plains Area Agency on Aging, *Avoid Hot Weather Health Emergencies*, (July 20, 2011), accessible at: http://www.cpaaa.org/news-events/2011/7/20/avoid-hot-weather-health-emergencies.html.
[35] Centers for Disease Control and Prevention, https://www.cdc.gov/disasters/extremeheat/faq.html.
[36] U.S. National Institutes of Health, National Institute on Aging, *Hypothermia: A Cold Weather Risk for Older People*, Press Release (Jan. 16, 2009), *available at* https://www.nih.gov/news-events/news-releases/hypothermia- cold-weather-risk-older-people.
[37] U.S. Centers for Disease Control and Prevention, *Extreme Heat Prevention Guide*, *available at* https://www.cdc.gov/disasters/extremeheat/heat_guide.html.

energy bills and utility disconnections on health and safety. A key finding of the report is that "[i]n addition to imposing general hardship, disconnected utilities make it difficult to manage chronic conditions such as asthma or diabetes, which require electricity to operate medical equipment or to refrigerate medications, such as insulin."[38]

Utility shut offs are widely recognized grounds justifying the termination of rental leases.[39] Low-income households fortunate enough to have secured limited federally subsidized housing benefits are particularly at risk, as a utility service shut-off constitutes grounds for eviction and the loss of the subsidy altogether.[40] In addition, loss of essential utility service results in other costs to the consumer, including spoiled food, lost wages, and the like; as well as other costs to society, such as hospital room emergency care, other health care costs, and credit and collection costs.[41]

In short, despite the rapid changes in energy and utility economics and technologies, affordable access to service remains a basic necessity of life. Rate design that shifts costs from higher-volume users to lower-volume, and often

[38] Smith, Lauren A., et al., "Unhealthy Consequences: Energy Costs and Child Health: A Child Health Impact Assessment of Energy Costs and the Low Income Home Energy Assistance Program," Child Health Impact Working Group, April 2007, p. 7.

[39] *See, e.g Long Drive Apts. V. Parker*, 421 S.E.2d 631 (N.C. App. 1992) (affirming trial court ruling that tenant had materially breached the lease by allowing the electricity in her apartment to be cut off during periods of freezing temperatures.)

[40] *See, e.g. Crochet v. Housing Authority of City of Tampa*, 37 F.3d 607, 613 (11th Cir. 1994) (referencing provision of public housing authority lease requiring tenants to maintain utility service as a condition of residency).

[41] National Association of State Utility Consumer Advocates, Encouraging State Legislatures and State Public Utility Commissions to Institute Programs to Reduce the Incidence of Disconnection of Residential Gas and Electric Service Based on Nonpayment (June 28, 2011), available at https://nasuca.org/encouraging-state-legislatures-andstate-public-utility-commissions-to-institute-programs-to-reduce-the-incidence-of-disconnection-of-residential-gasand-electric-service-based-on-nonpayment-2011-01/.

lower-income customers, presents a threat to many for whom paying for basic necessities presents an enormous challenge.

IV. Collection and Reporting of Time Series Data on Residential Arrearages, Disconnections, and Uncollectible Account Write-Offs

Q. PLEASE DESCRIBE THE NEED FOR MONTHLY COLLECTION AND REPORTING OF DATA RELATED TO THE HOME ENERGY SECURITY OF RESIDENTIAL ELECTRICITY CONSUMERS.

A. South Carolina's regulators, policy-makers, consumers, and utility decision-makers are faced with difficult questions regarding the effectiveness of programs and policies designed to ensure regular payment for utility service while recognizing the essential nature of that service. Questions regarding the effectiveness of existing regulatory consumer protections and credit and collection practices can only be answered through data-driven analysis of trends in customer arrearages, service disconnections and related indicators of the magnitude of utility payment troubles.

DEC's low-income residential customers face serious payment difficulties and loss of essential home electricity service. Regular reporting of indicators of payment problems is required to assess on an ongoing basis the state of home energy security among DEC's residential customers, and to evaluate the effectiveness of programs and policies intended to protect that security.[42]

[42] As noted above, public utilities were directed by the Commission, in Docket No. 2006-193-EG, to report quarterly on the number of customers involuntarily terminated from service for nonpayment of bills or for nonpayment of deferred payment agreements. These reports suggest widespread energy affordability issues. For example, DEC reported over 27,000 residential involuntary disconnections for nonpayment and over 10,000 disconnections for nonpayment of deferred payment agreements over the course of 2018. However, additional data points, as outlined in this section, are necessary to gauge rates of disconnection, the extent to which customers who have fallen behind on their bills are able to reach payment agreement terms, the extent to which lower-income customers are experiencing particular

Further, such data reporting is needed to assess the effectiveness of the credit and collection policies and practices of the Company, with an eye toward improving such practices when appropriate. Implementing a regular data collection and reporting protocol, in light of sweeping changes underway in energy and utility industry technology and economics – changes that have profound bearing on the energy security of the Company's most vulnerable customers – is particularly relevant and timely.

State regulators and consumer advocates have long recognized the need for collection of trend data on arrearages, disconnections, and related points. In fact, both the National Association of Regulatory Utility Commissioners ("NARUC") and the National Association of State Utility Consumer Advocates ("NASUCA") have adopted resolutions calling for the collection and reporting of this information. The 2007 NARUC Resolution is attached as Exhibit JH-3, and the 2011 NASUCA Resolution is attached as Exhibit JH-4.

Q. IS DEC ADEQUATELY TRACKING AND REPORTING DATA ON ARREARAGES, DISCONNECTIONS, AND RELATED POINTS?

A. No. In a data request, DEC was asked to provide data on the number of low-income[43] customer accounts, billing, receipts, unpaid accounts, payment agreements, disconnection notices, disconnections for nonpayment, and late payment charges. In response, the Company indicated that it "does not currently

difficulties, the effectiveness of payment agreements, late payment fees, and whether other credit and collection practices are effective in fostering maximum customer coverage of bills.

[43] The data request defined "low-income" customers as those who "participate in the Low Income Home Energy Assistance Program, the Weatherization Assistance Program, any ratepayer-funded bill payment assistance or arrearage management program, or any low-income, ratepayer-funded energy efficiency or DSM program. or any other means-tested energy assistance or efficiency program." DR-VS 3-2.

track this information for low income customers."[44] These data points would provide reliable indicators of customer payment difficulties, and as demonstrated below, many utilities in the United States report this critical information regularly.

In addition, DEC was asked in a data request to provide monthly figures for a number of credit and collection data points relative to all residential customers.

Q. PLEASE SPECIFY THE DATA POINTS AND REPORTING PROTOCOL THAT ARE REQUIRED TO GAUGE THE STATE OF LOW-INCOME AND GENERAL RESIDENTIAL HOME ENERGY SECURITY IN THE DEC SERVICE TERRITORY.

A. I recommend that the Commission direct the Company to, within six months of the Final Order in this proceeding, prepare, file with the Commission, and make available to the public monthly, in readily accessible spreadsheet format, the following data points by zip code:

<u>General Residential Customers</u>

- Number of Residential Accounts
- Total Usage
- Total Billed
- Total Receipts
- Number of Unpaid Accounts 60-90 Days after issuance of a bill
- Dollar Value of Unpaid Accounts 60-90 Days after issuance of a bill
- Number of Unpaid Accounts 90+ Days after issuance of a bill
- Dollar Value of Unpaid Accounts 90+ Days after issuance of a bill
- Total Number of Unpaid Accounts
- Total Dollar Value of Unpaid Accounts
- Number of Accounts Referred to Collection Agencies
- Number of New Payment Agreements
- Number of New Budget Billing Plans
- Number of Accounts Sent Notice of Disconnection for Non-payment
- Number of Service Disconnections for Non-payment

[44] DEC response to DR-VS 1-2.

- Number of Service Restorations after Disconnection for Non-payment
- Average Duration of Service Disconnection for Restored Accounts
- Number of Accounts Written Off as Uncollectible
- Dollar Value of Accounts Written Off as Uncollectible
- Dollar Value of Recovered Bad Debt

Low-Income Customers[45]

- Number of Accounts
- Total Usage
- Total Billed
- Total Receipts
- Total Receipts Paid by LIHEAP
- Total Number of Customers Receiving LIHEAP
- Number of Unpaid Accounts 60-90 Days after issuance of a bill
- Dollar Value of Unpaid Accounts 60-90 Days after issuance of a bill
- Number of Unpaid Accounts 90+ Days after issuance of a bill
- Dollar Value of Unpaid Accounts 90+ Days after issuance of a bill
- Total Number of Unpaid Accounts
- Total Dollar Value of Unpaid Accounts
- Number of Accounts Referred to Collection Agencies
- Number of New Payment Agreements
- Number of New Budget Billing Plans
- Number of Accounts Sent Notice of Disconnection for Non-payment
- Number of Service Disconnections for Non-payment
- Number of Service Restorations after Disconnection for Non-payment
- Average Duration of Service Disconnection for Restored Accounts
- Number of Accounts Written Off as Uncollectible
- Dollar Value of Accounts Written Off as Uncollectible
- Dollar Value of Recovered Bad Debt

I further recommend that Commission staff conduct a public technical session with DEC and interested stakeholders during the design phase of the data collection and reporting protocol to ensure that resulting reports are of benefit to all parties.

[45] "Low-income customers," as used in this context, refers to customers identified as participants in LIHEAP or other means-tested benefit programs.

Q. PLEASE PROVIDE EXAMPLES OF REPORTING FROM OTHER STATES THAT IS SIMILAR TO THE PROTOCOL AND DATA POINT COLLECTION THAT YOU HAVE RECOMMENDED.

A. In Ohio, electric and natural gas utilities have long collected and reported monthly data on arrearages, disconnections, and payment plans for general residential customers and those participating in the state's low-income Percentage of Income Payment Plan ("PIPP"). With respect to customers participating in the PIPP bill payment assistance program, Ohio utilities report monthly the number of accounts, billing and payment information, benefits from the PIPP, arrearage, and usage information. For all residential customers, Ohio utilities report number of accounts, service disconnections and reconnections, duration of disconnections, and information regarding payment plans and security deposits. Pursuant to the state's annual Winter Reconnection Order docket, companies file a separate report on customers having service restored or avoiding disconnection through that policy. Ohio's data reporting templates, provided by Public Utilities Commission of Ohio staff, are attached as Exhibit JH-5.

In Illinois, electric and natural gas utilities are required by rule to submit reports as required by the Commission. The Illinois rule states:

> Not later than February 20 and May 20 of each year, each gas and electric utility which has former customers affected by this Section shall file a report with the Commission providing statistical data concerning numbers of disconnections and reconnections involving utility service and deposits, and data concerning the dollar amounts involved in such transactions. The Commission shall notify each gas and electric utility prior to August 1 of each year concerning the information which is to be included in the report for the following heating season (Section 8-207 of the Act).[46]

[46] Illinois Administrative Code § 280.180(h).

Recent Illinois reporting templates are attached as Exhibit JH-6.

In Pennsylvania, the Public Utility Commission regulations[47] require that electric, natural gas, and steam heat utilities file—on a monthly basis—information regarding residential customer accounts. Monthly information includes arrearages by heating and non-heating usage, and dollar value and vintages of residential accounts in arrears. In addition, Pennsylvania utilities provide monthly data on residential termination notices sent and personal contacts made with customers prior to termination. Companies also report on numbers of terminations completed by heating or non-heating usage, dollar value and vintage of arrears, and zip code. Reconnections are reported by usage type and by circumstances associated with reconnection (i.e., payment plan settlement between company and customer, presentation of a medical certificate, or through making payment in full). In addition to monthly data, Pennsylvania utilities are required to report on an annual basis on the number of residential payment arrangements entered into, annual collection expenses incurred, dollar value of residential uncollectible write-offs, numbers of residential customers in arrears but not in payment agreements, and total number of low-income households served. The Pennsylvania Public Utilities Commission produces and publicizes a detailed annual report presenting by company the information gathered pursuant to provisions in the Pennsylvania Code. The most recent Pennsylvania report is attached as Exhibit JH-7.

[47] Monthly reporting requirements can be found in 52 PA Code § 56.231. Annual reporting requirements can be found in 52 PA Code § 62.5 and § 54.75.

In Iowa, provisions in the Administrative Code require that investor-owned electric[48] and natural gas[49] utilities report residential customer statistics to the Iowa Utilities Board on a monthly basis. Since 1999, Iowa utilities have reported monthly the number of accounts, the number of accounts in arrears, dollar amounts in arrears, disconnection notices issued, number of disconnections, number of reconnections, and uncollectible accounts. Except for disconnection and reconnection reporting, companies differentiate between general residential customers and those who have been deemed eligible for energy assistance benefits. The data collected by the Iowa Utilities Board is available on the Board's website,[50] and are distributed to interested parties on a monthly basis. A recent Iowa report is attached as Exhibit JH-8.

V. Conclusions

Q. PLEASE SUMMARIZE YOUR RECOMMENDATIONS.

A. I respectfully recommend that the Commission: (1) reject the Company's proposal to increase the residential basic facilities charge and not allow the basic facilities charge to increase any more than the percentage revenue increase, if any, allowed by the Commission for the residential class as whole ; (2) direct the Company to increase low-income energy efficiency program funding to a level proportionate to low-income customers' contribution to residential revenues, (3) direct the Company to, within six months of the final order in this proceeding, prepare, file with the Commission, and make available to the public monthly, in

[48] Iowa Admin. Code 199-20.2(5)(j).
[49] Iowa Admin. Code 199-19.2(5)(j).
[50] https://iub.iowa.gov/moratorium-report

readily accessible spreadsheet format, the data points outlined in Section IV, above; and (4) conduct a public technical session with DEC and interested stakeholders during the design phase of the data collection and reporting protocol to ensure that resulting reports are of benefit to all parties.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes.

STATE OF SOUTH CAROLINA
BEFORE THE PUBLIC SERVICE COMMISSION
DOCKET NO. 2018-319-E

CERTIFICATE OF SERVICE

I certify that the following persons have been served with one (1) copy of Direct Testimony of John Howat by electronic mail and/or U.S. First Class Mail at the addresses set forth below:

Becky Dover
Carri Grube-Lybarker
SC Department of Consumer Affairs
bdover@scconsumer.gov
clybarker@scconsumer.gov

Bess J. DuRant
Sowell & DuRant, LLC
1325 Park Street, Suite 100
Columbia, SC 29201
bdurant@sowelldurant.com

Carrie M. Harris
Stephanie U. Eaton
Spilman Thomas & Battle, PLLC
110 Oakwood Drive, Suite 500
Winston-Salem, NC
charris@spilmanlaw.com
sroberts@spilmanlaw.com

Derick P. Williamson
Spilman Thomas & Battle, PLLC
1100 Bent Creek Blvd., Suite 101
Mechanicsburg, PA 17050
dwilliamson@spilmanlaw.com

Heather Shirley Smith
Duke Energy Progress, LLC
40 W. Broad Street, Suite 690
Greenville, SC 29601
Heather.smith@duke-energy.com

Frank R. Ellerbe, III
Robinson, McFadden & Moore, P.C.
PO Box 944
Columbia, SC 29202
fellerbe@robinsongray.com

John Burnett
Duke Energy Business Services, LLC
550 South Tryon Street
Charlotte, NC 28202
John.burnett@duke-energy.com

Molly McIntosh Jagannathan
Troutmas Sanders LLP
301 South College Street, Suite 3400
Charlotte, NC 28202
Molly.jagannathan@troutman.com

Richard L. Whitt
Austin & Rogers, P.A.
508 Hampton Street, Suite 300
Columbia, SC 29201
rlwhitt@austinrogerspa.com

Scott Elliott
Elliott & Elliott, P.A.
1508 Lady Street
Columbia, SC 29201
selliott@elliottlaw.us

Robert Guild
314 Pall Mall
Columbia, SC 29201
bguild@mindspring.com

Thadeus B. Culley
Vote Solar
1911 Ephesus Church Road
Chapel Hill, NC 27517
thad@votesolar.org

Alexander G. Shissias
The Shissias Law Firm, LLC
1727 Hampton Street
Columbia, SC 29201
alex@shissiaslawfirm.com

Len Anthony
Law Office of Len Anthony
812 Schloss Street
Wrightsville Beach, NC 28480
len.anthony1@gmail.com

Jeffery M Nelson
C. Lessie Hammonds
Jenny R. Pittman
Steven W. Hamm
Office of Regulatory Staff
1401 Main Street, Suite 900
Columbia, SC 29201
jnelson@ors.sc.gov
lhammonds@ors.sc.gov
jpittman@ors.sc.gov
sham@ors.sc.gov

Hasala Dharmawardena
145 Cochran Road, Unit 4
Clemson, SC 29631
hasala@ieee.org

This the 26th day of February, 2019.

s/ Stinson Ferguson